

PH2 Focusing System + Hadronic Hose (HH)

- Total length of wire — 660 m
- Radius of wire — 1.0 mm

HH current, kA	ν_μ CC event rate per kTon*Year						
	LE beam			ME beam			HE beam
	≤ 3 GeV	≤ 6 GeV	Total	≤ 6 GeV	≤ 12 GeV	Total	Total
no HH	89	269	497	409	1075	1337	2926
0.5	103	315	667	461	1239	1658	3205
1.0	112	345	797	479	1270	1789	3320
1.5	118	362	845	493	1267	1853	3179
2.0	119	368	935	486	1289	1961	—

Table 1: The ν_μ CC event rates in the far detector calculated for different HH currents.

Fraction of:	LE beam		ME beam		HE beam	
	no HH	I=1.0kA	no HH	I=1.0kA	no HH	I=1.0kA
ν_μ	88.5%	95.2%	95.6%	97.8%	98.3%	98.8%
$\tilde{\nu}_\mu$	10.2%	3.30%	3.45%	1.29%	1.10%	0.55%
ν_e	1.1%	1.3%	0.84%	0.84%	0.60%	0.58%
$\tilde{\nu}_e$	0.21%	0.14%	0.08%	0.07%	0.03%	0.02%

Table 2: Beam contaminations for the HH current I=1.0 kA in comparison with those without HH.

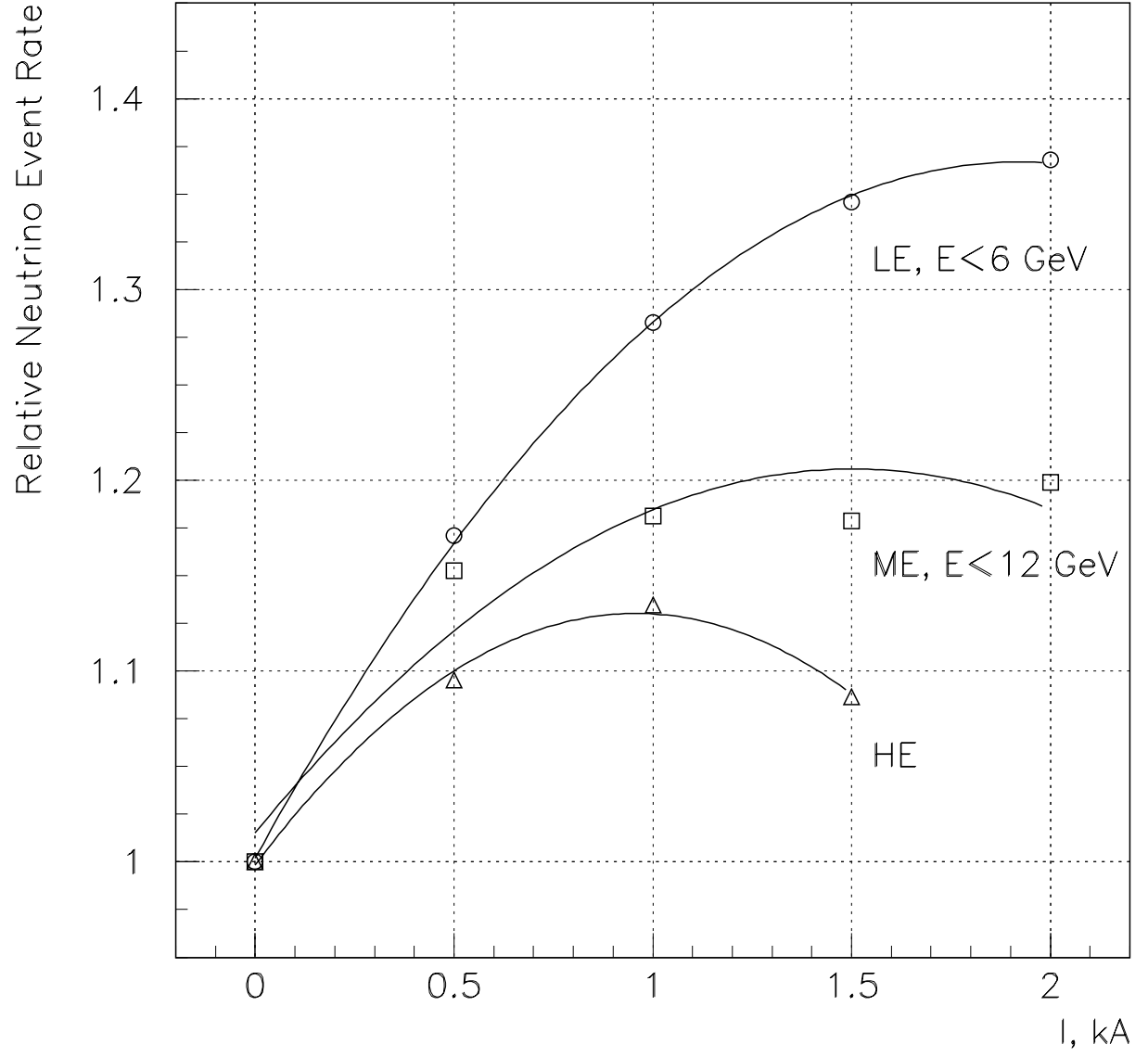


Figure 1: The ν_μ CC event rates in the far detector as functions of the HH current (see Table 1).

LE Beam. Far Detector NuMu Event Rate

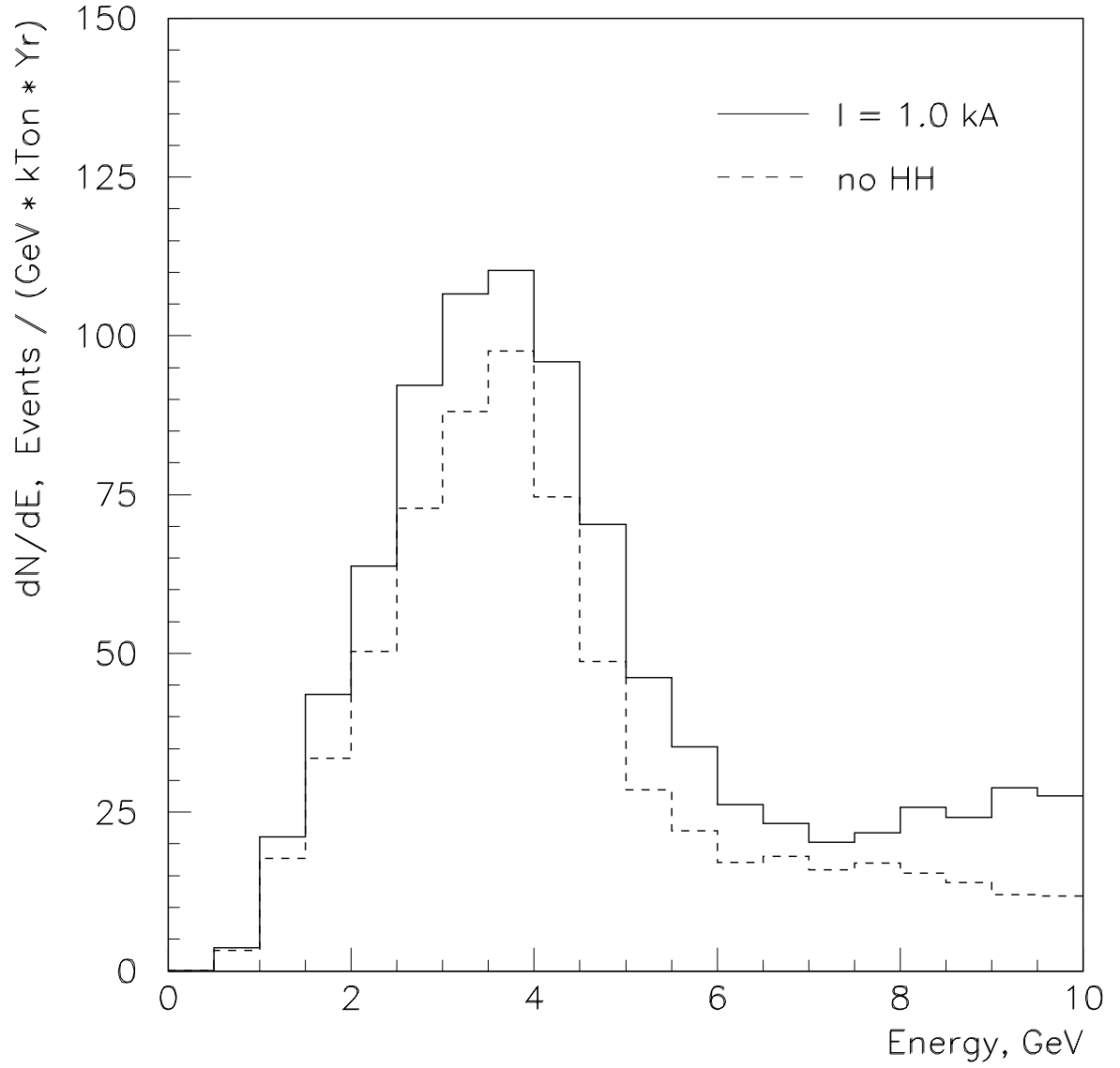


Figure 2: Energy spectra of ν_μ CC events in the far detector for the LE beam configuration.

ME Beam. Far Detector NuMu Event Rate

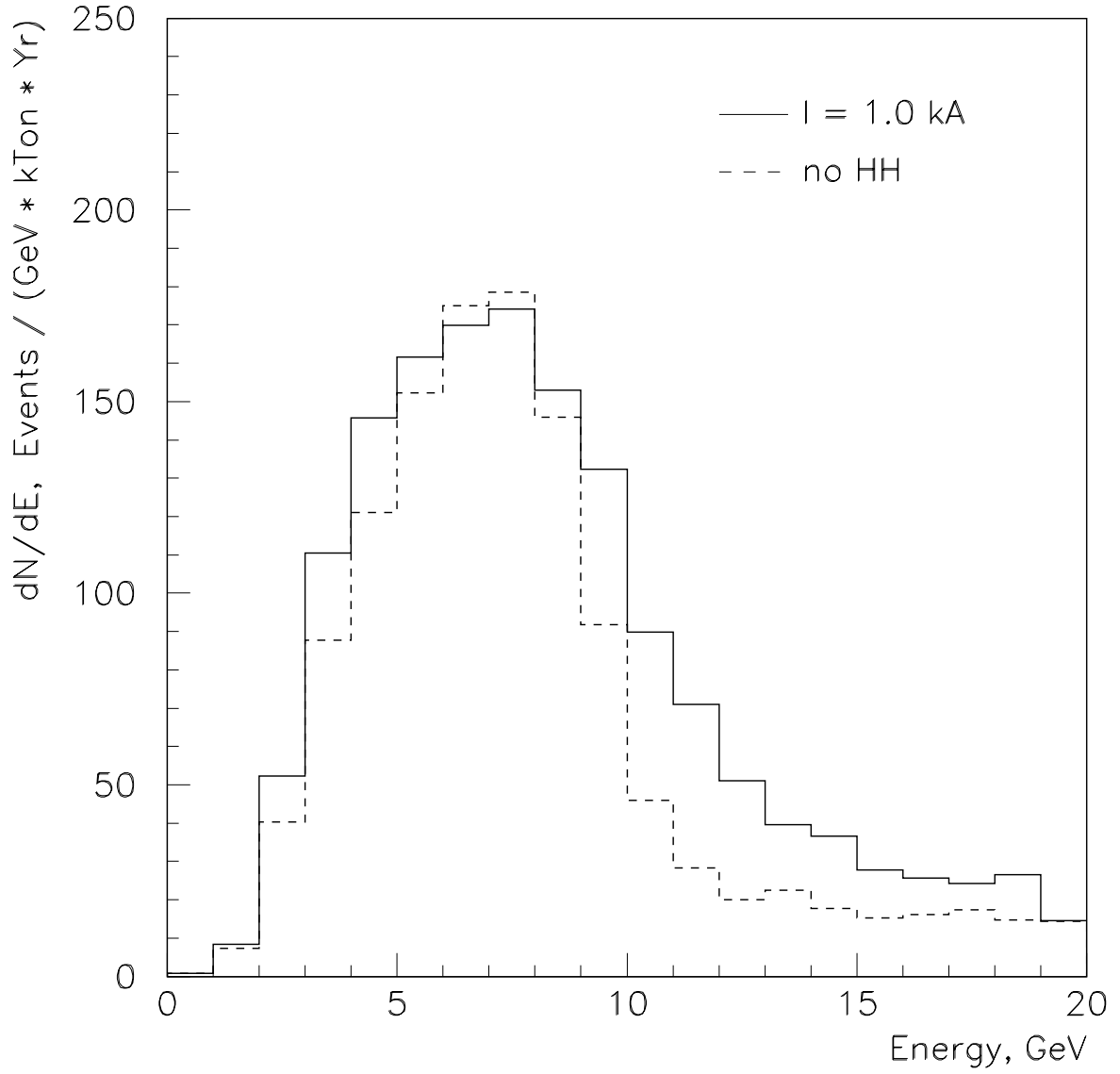


Figure 3: Energy spectra of ν_μ CC events in the far detector for the ME beam configuration.

HE Beam. Far Detector NuMu Event Rate

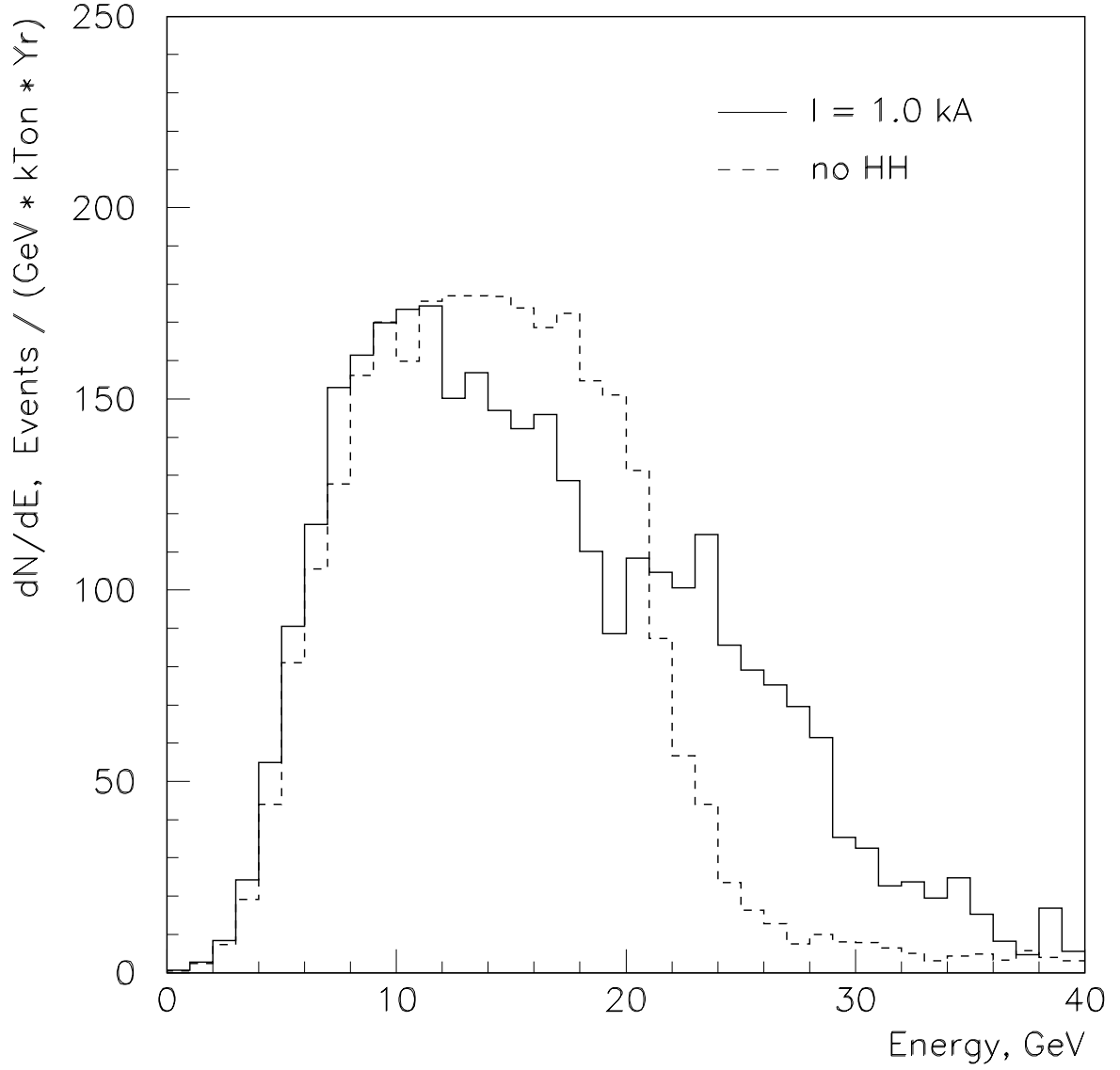


Figure 4: Energy spectra of ν_μ CC events in the far detector for the HE beam configuration.

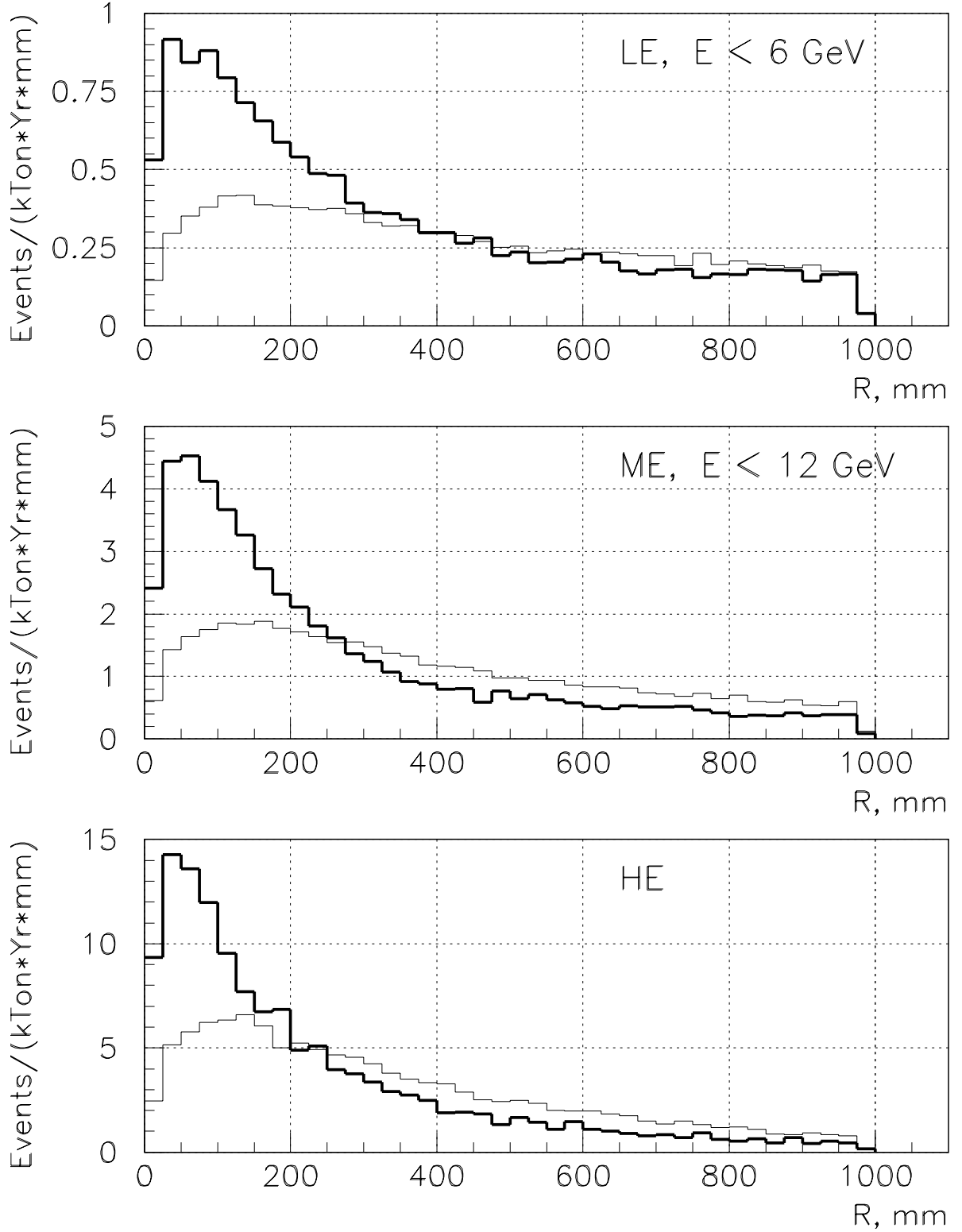


Figure 5: Radial distributions of parent decay points of ν_μ CC events in the far detector for the HH current $I=1.0$ kA (thick lines) in comparison with those without HH (thin lines).